IT-648 Fall 17
IT Risk Management

Dates:	Time:	Location:
08/22-12/14/2017	online	http://blackboard.valpo.edu
Instructor:	**Office Hours:**	**Contact:**
Aysegul Yayimli (with Sonja Streuber)	MTWR 1:00-2:30 pm in MEH 145F (Yayimli) MTWRF 10:30-11:30 in MEH 145H and on Google Hangouts (Streuber)	aysegul.yayimli@valpo.edu sonja.streuber@valpo.edu

Introduction

Welcome to IT-648, IT RIsk Management! This 3-credit course examines the essential business issues, information technology infrastructure, and foundations of information technology risk management. Working through case studies and extended lab exercises, it aims to equip students with the skills sought in the professional workforce, both, in terms of proactive security policy development to identify and combat threats and implement appropriate controls, and in terms of actively preventing malicious exploitation of assets and hardware or software vulnerabilities. This course prepares students to pursue applicable professional IT security certifications, such as Security+® or Associate of ISC®

Learning Objectives

At the end of the course, students will be able to effectively respond to information security concerns in a professional environment, specifically to:

1. Evaluate an organization's IT security posture and risk profile, incl. performing appropriate vulnerability scans
2. Identify, select, and implement an appropriate controls framework to reduce organizational IT risk, incl. hardware and software access and authorization management
3. Perform crucial system administration tasks to "harden" servers and other network equipment
4. Develop an appropriate incident handling and analysis strategy

Course Format

This is an online course, which means that you will be participating remotely. It does, however, NOT mean that you can log on only once a week. The goal in an online environment is to learn through constant engagement with the material and by communicating with the instructor and your peers.

The class rhythm is as follows:

- Wednesday by 11:59 pm CST: Answer a discussion question
- Friday by 11:59 pm CST: Respond to TWO of your peers' posts
- Saturday evening by 11:59 pm CST (or before!): Upload the weekly lab assignment

Required Textbooks & Materials

- Agrawal, Manish (2014), *Information Security and IT Risk Management*. Wiley.
- A laptop computer (Windows, Mac, or Linux). You must have administrator permissions.
- Oracle VirtualBox, available at https://www.virtualbox.org/ .
- CentOS Virtual Machine download (**2.8 GB**) AND CentOS MD5 SUM download (1 KB) from http://bcs.wiley.com/he-bcs/Books?action=resource&bcsId=8851&itemId=1118335899&resourceId=34893

Workload and Grading

This 3-credit course requires significant research and teamwork. You will be completing the following:

- **Attendance & Preparation (10 points per week = 150 total)**: Each Wednesday, answer a question in the weekly discussion forum (5 pts). Each Friday, respond to TWO of your peers' responses (5 pts). **This activity cannot be made up.**
- **Labs (50 points each = 750 total)**: Each week contains one lab assignment about a theoretical, practical, or programming problem and will be solved in teams of 2 or 3. Solutions must be posted on Blackboard by 11:59 pm CST on Saturday evening of the week in which they are due.
- **Final Exam (100 points)**: The final exam will be a randomized 50-question multiple-choice and multiple-answer exam covering the material throughout the course. It is scheduled for Thursday, 12/14/2017 from 10 am to 10 pm CST. You have 60 minutes to complete the exam.

You can earn up to 1,000 points in this course. No extra credit assignments will be given.

Letter Grade Conversion:

>93%: A	90-93%: A-	87-90%: B+	83-87%: B	80-83%: B-	77-80%: C+
73-77%: C	70-73%: C-	<70%: F			

Assignment Submission, Late Work, and Academic Honesty

- **Assignment Submission:** All Assignments must be submitted on Blackboard. **No emailed Assignments will be accepted.**
- **Late Work:** Labs are considered late if not posted to Blackboard by Saturday 11:59 pm CST of the week in which they are due. **Late work will lose 50% of the grade. Work submitted more than 1 week late will receive only 1 point.**
- **Academic Honesty:** All work you submit for this course must be your own. You may NOT use anyone else's words (from blogs, webpages, purchased solutions, etc.) without giving a clear source citation. If you are unsure, consult http://www.plagiarism.org/ or the Writing Center. In addition, you must write and sign with your name the following statement on all course work:

  I have neither given nor received, nor have I tolerated others' use of unauthorized aid.

  For more information about Valparaiso University's Academic Honor Code, case review cycles, and potential penalties, please refer to http://www.valpo.edu/student/honorcouncil/index.php

  Any work found to violate the Valparaiso University Honor Code will receive 0 points and be referred to the Graduate School.

Diversity and Inclusion

Valparaiso University aspires to create and maintain a welcoming environment built on participation, mutual respect, freedom, faith, competency, positive regard, and inclusion. This course will not tolerate language or behavior that demeans members of our learning community based on age, ethnicity, race, color, religion, sexual orientation, gender identity, biological sex, disabilities (visible and invisible), socio-economic status, or national origin. The success of this class relies on all students' contribution to an anti-discriminatory environment where everyone feels safe, welcome, and encouraged to engage, to explore, and ultimately, "to embark on a rewarding personal and professional journey" (Pres. Heckler).

Title IX

Valparaiso University strives to provide an environment free of discrimination, harassment, and sexual misconduct (sexual harassment, sexual violence, dating violence, domestic violence, and stalking). If you have been the victim of sexual misconduct, we encourage you to report the incident. If you report the incident to a University faculty member or instructor, she or he must notify the University's Title IX Coordinator about the basic facts of the incident. Disclosures to University faculty or instructors of sexual misconduct incidents are not confidential under Title IX. Confidential support services available on campus include: Sexual Assault Awareness & Facilitative Education Office "SAAFE" (219-464-6789), Counseling Center (219-464-5002), University Pastors (219-464-5093), and Student Health Center (219-464-5060). For more information, visit http://www.valpo.edu/titleix/ .

Access and Accommodation Services

The Access & Accommodations Resource Center (AARC) is the campus office that works with students to provide access and accommodations in cases of diagnosed mental or emotional health issues, attentional or learning disabilities, vision or hearing limitations, chronic diseases, or allergies. You can contact the office at aarc@valpo.edu or 219.464.5206. Students who need, or think they may need, accommodations due to a diagnosis, or who think they have a diagnosis, are invited to contact AARC to arrange a confidential discussion with the AARC office. Further, students who are registered with AARC are required to contact their professor(s) if they wish to exercise the accommodations outlined in their letter from the AARC.

Academic Support

To get help, use the Academic Success Center (ASC) online directory (valpo.edu/academicsuccess) or contact the ASC (academic.success@valpo.edu) to help point you in the right direction for academic support resources for this course. Valpo's learning centers offer a variety of programs and services that provide group and individual learning assistance for many subject areas. These learning centers include:

- Graduate Tutoring Lab: Serves the academic needs of Graduate students – tutors offer suggestions on organization of papers, assist in research and citations, and help in understanding difficult assignments. Additional one on one tutoring is also available.
- Writing Center: Primarily serves the needs of undergraduate students, but is also available for Graduate students. Writing Consultants provide proofreading and editing assistance for papers and assignments.

Library Services

The librarian best able to help you navigate information resources for independent research or additional reading is listed on the library research guide for our department. Click the link to Library Guides within the Blackboard table of contents for this course.

Class Cancellations

Notifications of class cancellations will be made through Blackboard with as much advance notice as possible. It will be both posted on Blackboard and sent to your Valpo e-mail address. If you don't check your Valpo e-mail account regularly or have it set-up to be forwarded to your preferred e-mail account, you may not get the message. Please check Blackboard and your Valpo e-mail (or the e-mail address it forwards to) before coming to class.

Schedule

Week	Start Date	Weekly Topic	Readings and Videos (read and watch before Monday)	Due by 11:59 pm CST
1	08/22	Course Introduction	Agrawal 1 Other materials on Blackboard	F: Post S: Responses S: LAB_1
2	08/28	System Administration (1): Linux System Installation, Case Studies	Agrawal 2 Other materials on Blackboard	W: Post F: Responses S: LAB_2
3	09/04	System Administration (2): OS Structure, File system	Agrawal 3 Other materials on Blackboard	W: Post F: Responses S: LAB_3
4	09/11	The basic information security model: Common vulnerabilities, threats and controls	Agrawal 4 Other materials on Blackboard	W: Post F: Responses S: LAB_4
5	09/18	Asset Identification and Characterization: IT asset lifecycle and asset identification, system profiling, Asset ownership and operational responsibilities	Agrawal 5 Other materials on Blackboard	W: Post F: Responses S: LAB_5
6	09/25	Threats and Vulnerabilities: Threat models, Threat Agent, Threat Action, Vulnerability Scanning	Agrawal 6 Other materials on Blackboard	W: Post F: Responses S: LAB_6
7	10/02	Encryption Controls: Encryption types and their details, Encryption in use	Agrawal 7 Other materials on Blackboard	W: Post F: Responses S: LAB_7
8	10/09	Identity and Access Management: Authentication, Single Sign-On, Federation	Agrawal 8 Other materials on Blackboard	W: Post F: Responses S: LAB_8
SPRING RECESS 03/04 8 pm CST to 03/20 8 am CST				
9	10/23	Hardware and Software Controls (1): Password management, Access control, Firewalls	Agrawal 9 Other materials on Blackboard	W: Post F: Responses S: LAB_9
10	10/30	Hardware and Software Controls (2): Intrusion detection/prevention systems, Patch management for operating systems and applications, End point protection	Agrawal 9 Other materials on Blackboard	W: Post F: Responses S: LAB_10
11	11/06	Shell Scripting: Output redirection, Text manipulation, Variables, Conditionals, User input, Loops	Agrawal 10 Other materials on Blackboard	W: Post F: Responses S: LAB_11
12	11/13	Incident Management: Incidents overview, Incident handling	Agrawal 11 Other materials on Blackboard	W: Post F: Responses S: LAB_12
13	08/22	Incident Analysis: Log analysis, Event criticality, General log configuration and maintenance, Live	Agrawal 12 Other materials on	W: Post F: Responses

		Incident response, Timelines, Other forensics topics	Blackboard	S: LAB_13
THANKSGIVING BREAK 11/18 to 11/26				
14	11/27	Policies, Standards, and Guidelines: Writing a policy, Impact assessment and vetting, Policy review, Compliance, Key Policy Issues	Agrawal 13 Other materials on Blackboard	W: Post F: Responses S: LAB_14
15	12/04	Course Summary & certification paths: The NIST 800-39 framework, Sarbanes-Oxley compliance Guest Speaker (CISSP)	Agrawal 14 Other materials on Blackboard	W: Post F: Responses S: LAB_15
FINAL	12/14 10:00 am -10:00 pm CST	COURSE FINAL as posted by Office of the Registrar at http://www.valpo.edu/registrar/files/2017/03/Final-Exam-Schedule-Fall-2017.pdf		FINAL

APPENDIX

Student Learning Objectives—Graduate School

1. Students will understand and practice methods of inquiry and strategies of interpretation within the student's field of study.
2. Students will master the knowledge and skills pertinent to the student's field of study.
3. Students will effectively articulate the ideas, concepts, and methods through written and oral presentation.
4. Students will understand the connection between their knowledge and skills on the one hand and their professional identity, responsibilities, and demands on the other.
5. Students will integrate knowledge and methods of their study with cognates and other disciplines.
6. Students will study, reflect upon, and practice ethical behavior and cultural sensitivity as they relate to professional and personal responsibility.

Student Learning Objectives—Information Technology Program

1. To understand and practice methods of inquiry and strategies of interpretation within the student's field of study.
   1A. Students will master several programming environments.
   1B. Students will learn to identify and isolate problems.
2. To master the knowledge and skills pertinent to the student's field of study.
   2A. Students will acquire an extensive technology related vocabulary.
   2B. Students will become comfortable using a wide range of technology environments.
3. To effectively articulate the ideas, concepts, and methods through written and oral presentation.
   3A. Students will be taught how to make formal, oral presentations and be required to give 6 such presentations during their program.
   3B. Students will write numerous, thorough papers requiring extensive research. They will be required to use the services on the writing center.
4. To understand the connection between their knowledge and skills one hand and their professional identity, responsibilities, and demands on the other.
   4A. Students will understand the implications of legal and professional regulations as they relate to information technology.
   4B. Students will study how technology can be made available to people that are traditionally less advantaged.
5. To integrate knowledge and methods of their study with cognates and other disciplines.
   5A. Students will learn techniques of modeling data from other disciplines.
   5B. Students will study human factors in IT.
6. To practice ethical and cultural sensitivity as it relates to professional and personal responsibility.
   6A. Students will examine a wide range of ethical issues related to technology and the potential effects on people and the environment.
   6B. Students will explore the relationship between IT and ethnic and cultural diversity.